AMENDMENTS TO THE CLAIMS

1. (Original) A method of treating a cutting fluid comprising simultaneously exposing said cutting fluid to gas microbubbles and ultrasound of a frequency of 100 kHz or higher.

2. (Original) The method of Claim 1, wherein said gas microbubbles consist essentially of ambient air.

3. (Original) The method of Claim 1, wherein the diameter of said microbubbles is less than about 50 micrometers.

4. (Original) An apparatus for reducing the presence of live microorganisms in a cutting fluid comprising:

a compartment for holding a reservoir of cutting fluid;

an ultrasound emitter configured to emit ultrasound signals at a frequency higher than 100 kHz into said compartment; and

a gas microbubble emitter configured to emit gas microbubbles having an average diameter of less than 1 mm into the ultrasound field in the compartment containing the cutting fluid.

5. (Original) The apparatus according to Claim 4, wherein the gas microbubbles are not ozone microbubbles.

6. (Original) The apparatus according to Claim 4, wherein the gas microbubbles are selected from the group consisting of air and oxygen microbubbles.

7. (Original) The apparatus according to Claim 4, wherein the cutting fluid is a water-soluble cutting fluid.

8. (Original) The apparatus according to Claim 4, wherein the cutting fluid is a synthetic cutting fluid.

9. (Original) The apparatus according to Claim 4, wherein the cutting fluid is a semi-synthetic cutting fluid.

10. (Original) The apparatus according to Claim 4, wherein the average diameter of the gas microbubbles is less than 50 μm.

11. (Original) The apparatus according to Claim 4, wherein the average diameter of the gas microbubbles is less than 30 μm.

12. (Currently Amended) The apparatus according to Claim 4, wherein the apparatus is configured such that the ultrasound emitted into the compartment does not generate a stationary field phenomenon.

13. (Original) The apparatus according to Claim 4, further comprising an electromagnetic radiation emitter configured to emit electromagnetic radiation in the visible range into the ultrasound field.

14. (Original) The apparatus according to Claim 4, wherein the microorganisms are bacteria.

15. (Original) A method of treating cutting fluid comprising:

collecting cutting fluid from a fluid routing circuit;

routing said cutting fluid into a compartment;

simultaneously exposing said cutting fluid in compartment to gas microbubbles and ultrasound of a frequency of 100 kHz or higher.

16. (Original) The method of Claim 15, wherein said gas microbubbles consist essentially of ambient air.

17. (Original) The method of Claim 15, wherein the diameter of said microbubbles is less than about 50 micrometers.

18. (Original) A machining system comprising:

a cutting device;

a cutting fluid circuit connected to the cutting device;

a compartment for holding a reservoir of cutting fluid through which said cutting fluid is routed;

an ultrasound emitter configured to emit ultrasound signals at a frequency higher than 100 kHz into said compartment; and

a gas microbubble emitter configured to emit gas microbubbles having an average diameter of less than 1 mm into the ultrasound field in the compartment containing the cutting fluid.

19. (Original) The apparatus according to 18, wherein the gas microbubbles are not ozone microbubbles.

20. (Original) The apparatus according to Claim 18, wherein the gas microbubbles are selected from the group consisting of air and oxygen microbubbles.

21. (Original) The apparatus according to Claim 18, wherein the cutting fluid is a water-soluble cutting fluid.

22. (Original) The apparatus according to Claim 18, wherein the cutting fluid is a synthetic cutting fluid.

23. (Original) The apparatus according to Claim 18, wherein the cutting fluid is a semi-synthetic cutting fluid.

24. (Original) The apparatus according to Claim 18, wherein the average diameter of the gas microbubbles is less than 50 μm.

25. (Original) The apparatus according to Claim 18, wherein the average diameter of the gas microbubbles is less than 30 μm.

26. (Currently Amended) The apparatus according to Claim 18, wherein the apparatus is configured such that the ultrasound emitted into the compartment does not generate a stationary field phenomenon.

27. (Original) The apparatus according to Claim 18, further comprising an electromagnetic radiation emitter configured to emit electromagnetic radiation in the visible range into the ultrasound field.